CLAIMS

What is claimed is:

1. A method of treating dystrophic neural tissue, comprising introducing neural progenitor cells derived from an adult animal donor into dystrophic neural tissue in an animal recipient.

2. A method of repopulating or rescuing a dystrophic retina or optic nerve with neural cells, comprising introducing neural progenitor cells derived from an adult donor into dystrophic retinal or optic nerve tissue in an animal recipient.

3. The method of claim 1, wherein said neural progenitor cells are introduced into the recipient's central nervous system (CNS).

4. The method of claim 1 or 2, wherein said neural progenitor cells are placed in a site selected from the group consisting of an eye, an optic nerve, and a vitreous.

5. The method of claim 1 or 2, wherein said neural progenitor cells are clonally derived.

6. The method of claim 1 or 2, wherein said neural progenitor cells are derived from brain tissue.

7. The method of claim 1 or 2, wherein said neural progenitor cells are derived from a hippocampus or a ventricular zone.

8. The method of claim 1 or 2, wherein said recipient is an immature or young animal.

9. The method of claim 1 or 2, wherein said recipient is an adult.

10. The method of claim 1 or 2, wherein said recipient is a human.

11. The method of claim 1 or 2, wherein said donor and said recipient are of different species.

12. The method of claim 11, wherein said donor and recipient pair is selected from the group consisting of the following pairs: a rat donor and a mouse recipient; a mouse donor and a rat recipient; a pig donor and a human recipient.

13. The method of claim 1 or 2, wherein said donor and said recipient are of the same species.

14. The method of claim 13, wherein said donor and said recipient are allogeneic.

15. The method of claim 13, wherein said donor and said recipient are syngeneic.

16. The method of claim 2, wherein said dystrophic retinal tissue is a result of an optic neuropathy.

17. The method of claim 2, wherein said dystrophic retinal tissue is a result of glaucoma.

18. The method of claim 1 or 2, wherein said neural progenitor cells have been cultured in vitro in a culture medium comprising at least one trophic factor.

19. The method of claim 18, wherein the at least one trophic factor is selected from the group consisting of a neural growth factor; a neurotrophin; a mitogen; a cytokine; a growth factor; a hormone; and a combination thereof.

20. The method of claim 18, wherein said culture medium comprises a member selected from the group consisting of: fibroblast growth factor alone; fibroblast growth factor and epidermal growth factor; and fibroblast growth factor and epidermal growth factor and heparin.

21. The method of claim 1 or 2, wherein said neural progenitor cells have been derived by performing the steps of:

(a) isolating fresh neural progenitor cells from an adult donor animal;

(b) culturing said freshly isolated neural progenitor cells on a polyornithene/laminin-coated substrate, in a culture medium comprising at least one trophic factor;

(c) incorporating an identifying, genetic marker into said cultured progenitor cells; and

(d) cloning individual neural progenitor cell lines from the cultured cells resulting from step (c).

22. The method of claim 20, wherein the at least one trophic factor is selected from the group consisting of a neural growth factor; a neurotrophin; a mitogen; a

cytokine; a growth factor; a hormone; and a combination thereof.

23. The method of claim 20, wherein said neural progenitor cells are derived from brain tissue.

24. The method of claim 20, wherein the neural progenitor cells are derived from a hippocampus or a ventricular zone.

25. The method of claim 5, further comprising, prior to introducing said neural progenitor cells into an animal recipient, confirming the lineage potential of each clone of neural progenitor cells by inducing a sample of said clonally derived neural progenitor cells to differentiate in conditioned medium.